

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Applicant: Udayakumar et al.
Filed: Herewith
For: FERROELECTRIC CAPACITOR HYDROGEN BARRIERS AND METHODS
FOR FABRICATING THE SAME

INFORMATION DISCLOSURE STATEMENT

Mail Stop Patent Application
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Pursuant to 37 C.F.R. 1.97 and 1.98, and in compliance with 37 C.F.R. 1.56, the Office's attention is directed to the patents, pending applications, publications and other information listed on the attached PTO-1449. A copy of each listed document is enclosed except for: (a) pending applications or (b) those previously cited or submitted to the Office in the following application(s) upon which this application relies for an earlier filing date under 35 U.S.C. 120:

Serial No.: _____
Filing Date: _____

Regarding any document, publication or other information for which a date is not given on the attached PTO-1449, Applicant(s) believe(s) the same may qualify as "prior" art to this application and should be treated accordingly, although Applicant(s) reserve(s) the right to contest the prior art status of any document, publication or information, should issue arise.

2. Regarding each listed document that is not in the English language, an English-language translation accompanies this Statement as indicated on the attached PTO-1449 or a concise explanation of the relevance of the document is set forth in the following document(s):

- (a) ____ Copy of each English language version of a search report indicating the degree of relevance found by the foreign office of each document being submitted from the search report.
- (b) ____ Attachment entitled "Concise Explanation of Relevance of Non-English Language Documents".

3. Pursuant to 37 C.F.R. 1.97(b) this Statement is being filed (one must be checked):

- (a) X Within 3 months of the filing date or date of entry into the National Stage.
- (b) ____ Before the mailing date of a first Office Action on the merits. If this Statement is not filed before the mailing date of a first Office Action on the merits, the required certification is given below or, in the absence thereof, the Office is authorized to charge the required fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 20-0668 for consideration of this Statement.
- (c) ____ Before the mailing date of a first Office Action after the filing of a request for continued examination under 37 C.F.R. 1.114.

(d) ___ After the period set forth in 37 C.F.R. 1.97(b) but before the mailing date of either a final action or a notice of allowance.

(1) ___ The required certification is given below, or

(2) ___ Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p) for consideration of this Statement, or

(3) ___ Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 20-0668

(e) ___ After the mailing date of either a final action or a notice of allowance, but before payment of the issue fee. Petition hereby is made for consideration of this Statement and the required certification is indicated below.

(1) ___ Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(i)(1), or

(2) ___ Charge the fee set forth in 37 C.F.R. 1.17(i)(1) to Deposit Account No. 20-0668.

4. Certification (if applicable)

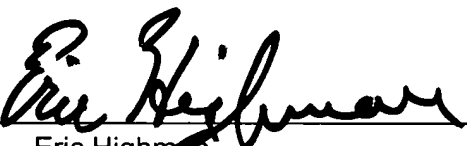
(a) ___ The undersigned hereby certifies that each item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than 3 months prior to the filing of this Statement.

(b) ___ The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the undersigned's knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. 1.56(c) more than 3 months prior to the filing of this Statement.

5. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-0668.

Respectfully Submitted,

ESCHWEILER & ASSOCIATES, LLC


By 
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CERTIFICATION UNDER 37 CFR 1.10

I hereby certify that this paper, and the documents referred to as attached or enclosed, are being deposited with the United States Postal Service on the date set forth below in an envelope as "Express Mail Post Office to Addressee" service under 37 CFR 1.10, with the below indicated mailing label number, addressed to Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: March 18, 2004


Christine Gillroy

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PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

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Substitute for Form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete If Known	
				Application Number	
				Filing Date	
				First Named Inventor	Udayakumar et al.
				Group Art Unit	
Examiner Name					
Sheet	1	of	2	Attorney Docket No.	TI-36447

U.S. PATENT DOCUMENTS						
Exam. Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Doc.	Date of Pub. of Cited Doc. (mm-dd-yyyy)	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	AA	5,452,178		Emesh et al.	09/19/1995	Entire Document
	AB	5,972,722		Visokay et al.	10/26/1999	Entire Document
	AC	6,090,697		Xing et al.	07/18/2000	Entire Document
	AD	6,144,060		Park et al.	11/07/2000	Entire Document
	AE	6,177,351	B1	Beratan et al.	01/23/2001	Entire Document
	AF	6,225,656	B1	Cuchiaro et al.	05/01/2001	Entire Document
	AG	6,242,299	B1	Hickert	06/05/2001	Entire Document
	AH	6,261,967	B1	Athavale et al.	07/17/2001	Entire Document
	AI	6,291,251	B1	Nam	09/18/2001	Entire Document
	AJ	2001/0034106	A1	Moise et al.	10/25/2001	Entire Document
	AK	2001/0044205	A1	Gilbert et al.	11/22/2001	Entire Document
	AL	6,355,952	B1	Yamoto et al.	03/12/2002	Entire Document
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	AN	6,423,592	B1	Sun	07/23/2002	Entire Document
	AO	6,495,413	B2	Sun et al.	12/17/2002	Entire Document
	AP	2003/0006439	A1	Bailey	01/09/2003	Entire Document
	AQ	6,512,256	B1	Cuchiaro et al.	01/28/2003	Entire Document
	AR	6,528,386	B1	Summerfelt et al.	03/04/2003	Entire Document
	AS	6,534,809	B2	Moise et al.	03/18/2003	Entire Document
	AT	2003/0098497	A1	Solayappan et al.	05/29/2003	Entire Document
	AU	6,576,482	B1	Aggarwal et al.	06/10/2003	Entire Document
	AV	6,576,942	B2	Okutoh et al.	06/10/2003	Entire Document
	AW	2003/0129847	A1	Celii et al.	07/10/2003	Entire Document
	AX	6,610,549	B1	Aggarwal et al.	08/26/2003	Entire Document
	AY	6,611,014	B1	Kanaya et al.	08/26/2003	Entire Document
	AZ	6,682,995	B2	Zhang et al.	01/27/2004	Entire Document

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Exam. Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	CA	"FeRAM Tutorial", ALI SHEIKHOESLAMI and P. GLENN GULAK, A survey of circuit Innovations in Ferroelectric random-access memories, Proceedings of the IEEE, Vol. 88, No. 3, May, 2000, 3 pages, taken from the Internet at: http://www.eecg.toronto.edu/-ali/ferro/tutorial.html .	
	CB	"A survey of Circuit Innovations in Ferroelectric Random Access Memories", ALI SHEIKHOESLAMI and P. GLENN GULAK, Proceedings of the IEEE, Vol. 88, No. 5, May, 2000, pp. 667-689.	
	CC	"Generic CVD Reactor", CVD Basics, DANIEL M. DOBKIN, Dec. 7, 2001, 3 pages, taken from the Internet at: http://www.batnet.com/enigmatics/semiconductor_processing/CVD_Fundamentals/introdu...	
	CD	"Physical Vapor Deposition", Cougar Labs, Inc., Dec. 7, 2001, 9 pages, taken from the Internet at: http://www.cougarlabs.com/pvd1.html .	

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				Examiner Name	
Sheet	2	of	2	Attorney Docket No.	TI-36447

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Exam. Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		"Parasitic Channel Induced by Spin-On-Glass in a Double-Level Metallization Complimentary Metal Oxide Semiconductor Process", M. MURATA, K. YOMAUCHI, H. KOJIMA, A. YOKOYAMA, T. INOUE and T. IWAMORI, published in the Journal of Electrochemical Society, Volume 149, No. 8, 1993, pgs. 2346-2356.	
		"Effects of Oxygen Content on Properties of Silicon Oxide Films Prepared at Room Temperature by Sputtering-Type Electron Cyclotron Resonance Plasma", KATSUHIKO FURUKAWA, YICHUN LIU, HIROSHI NAKASHIMA, DAWEI GAO, YASUHIRO KASHIWAZAKI, KIICHIRO UCHINO, KATSUNORI MURAOKA and HIROHISA TSUZUKI, Journal of Applied Physics, Volume 84, Number 8, October 15, 1998, pp. 4579-4584.	
		Notes taken at the International Symposium on Applications of Ferroelectrics Conference in Nara, Japan in May, 2002. The speaker was H. Nagel of Infineon Technologies and Toshiba Corporation, Key Technologies for High Density FeRAM Application, one page.	
		"The Hydrogen Content of Plasma-Deposited silicon Nitride", W. A. LANFORD and M. J. RAND, American Institute of Physics, J. Appl. Phys. 49(4), April, 1978, Pgs. 2473-2477.	
		"Free Energy Model for the Analysis of Bonding in a-Si _x N _y H _z Alloys", Z. YIN and W. SMITH, J. Vac. Sci. Technol. A, Volume 9, No. 3, May/June, 1991, pg. 972.	
	CG	"Comparison Between HCP CVD and PECVD Silicon Nitride for Advanced Interconnect Applications", J. YOTA, M. JANANI, L.E. CAMILLETTI, A. KAR-ROY, Q.Z. LIU, C. NGUYEN, M.D. WOO J. HANDER, and P. VAN CLEEMPUT, IEEE, 2000, pgs. 76-78.	
	CH	"Hydrogen Role on the Properties of Amorphous Silicon Nitride", F. DE BRITO MOTS, J.F. JUSTO and A. FAZZIO, Journal of Applied Physics, Volume 86, Number 4, August 15, 1999, pgs. 1843-1847.	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

US and Foreign Patent Documents: ¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

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